REMARKS

A. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the opinion that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the following remarks.

B. The Invention

The present invention is directed to a data capturing and processing system for a roller bearing in which at least one sensor element, strip conductors and electronic components are arranged adjacent a flexible carrier material, characterized in that the sensor element, the strip conductors and the electronic components are directly connected to the flexible carrier material.

In the first embodiment of the data capturing and processing system shown in figures 1 and 2, the sensor elements are connected by signaling technology via contacting elements, in particular, by means through-hole plating elements, to the strip conductors arranged on the opposite side of the flexible carrier material. The through-hole plating elements are preferably formed in the flexible carrier material and aligned perpendicularly in relation to the longitudinal and transverse extents of said carrier material.

In the second embodiment of the data capturing and processing system shown in figure 3, the sensor element is a capacitor with at least two plate-like conductor areas which are opposite one another and thereby separated from one another by the flexible carrier material, the carrier material being a dielectric between the conductor areas. Preferably, the sensor element is connected by signaling technology via contacting elements to the strip

conductors, the contacting elements being formed in the flexible carrier material and arranged in the manner of surface areas.

C. Claims Status

Claims 1-31 are pending in this Application.

Claim 1 has been amended to recite that the sensor elements are connected by signaling technology via contacting elements, in particular, by means through-hole plating elements, to the strip conductors. Support for this amendment can be found on page 8, second full paragraph, and page 15, first full paragraph. Respectfully, new matter has not been added.

Claim 5 has been amended to be in independent form and to clarify the limitation that the at least two conductor areas comprise a first conductor area and a second conductor area, the first conductor area is provided on an upper side of the carrier material and the second_conductor area is arranged on an underside of the carrier material. Support for this amendment can be found on page 6, first full paragraph, and page 16, second full paragraph. Respectfully, new matter has not been added.

Claims 1 and 25-27 have been amended to delete the term "roller" before the term "bearing." The measurement date capturing and processing system according to the present invention is advantageously used on both roller bearings and linear bearings. Support for this amendment can be found on page 11, third full paragraph. Respectfully, new matter has not been added.

Claims 1-27 have also been amended to place them into more conventional U.S. format by deleting the reference characters and replacing the phrase "characterized in that" with --wherein--.

New dependent claims 28-31 have been added to recite dependency on amended independent claim 5 fro the similar subject matter of clams 8 and 25-27, which depend on claim 1.

D. Prior Art Rejection

The Examiner had put forward two prior art rejections. The prior art rejections are as follows:

(1) Claims 1-3, 5, 6, 9, 10, 15, 16, 19-21 and 23-27 had been rejected as being anticipated by Takizawa; and

(2) Claims 4, 7, 8, 11-14, 17, 18 and 22 had been rejected as being unpatentable over a combination of Takizawa and McDearmon.

1. Takizawa and McDearmon, taken alone or in combination, do not teach or suggest the sensor elements are connected by signaling technology via contacting elements, in particular, by means through-hole plating elements, to the strip conductors.

Claim 1 has been amended to recite that the sensor elements are connected by signaling technology via contacting elements, in particular, by means through-hole plating elements, to the strip conductors. Support for this limitation can be found on page 8, second full paragraph, and page 15, first full paragraph. Applicants respectfully submit that Takizawa and McDearmon, taken alone or in combination, do not teach a sensor element connected by signaling technology via contacting elements to the conductors, the elements being formed in the flexible material and aligned perpendicularly, by means through-hole plating elements to the strip conductors arranged on the opposite side of the flexible carrier material.

2. Takizawa does not teach or suggest a sensor element formed by a plate capacitor.

Claim 5 has been amended to be in independent form. Amended claim 5 clarifies that the sensor element is a capacitor with at least two plate-like conductor areas which are opposite one another and thereby separated from one another by the flexible carrier material, the carrier material being a dielectric between the conductor areas, the at least two conductor areas comprising a first conductor area and a second conductor area, the first conductor area being provided on an upper side of the carrier material and the second conductor area being arranged on an underside of the carrier material. Support for this amendment can be found on page 6, first full paragraph, and page 16, second full paragraph.

Takizawa had been cited to teach the sensor 11 is a capacitor 73a, 75a with at least two plate-like conductor areas opposite one another and separated from one another by the material, the material being a dielectric. Applicants respectfully submit that Takizawa does not teach or suggest a sensor element formed by a plate capacitor.

In Takizawa, sensor 72 includes a detecting part 15 and a transmitting part 73, 75. (See Col. 9, lines 60-64 and col. 10, lines 26.) Transmitting part 73, 75 includes circuit components such as capacitor 73a, 75a. Detecting part 15 is used for detecting vibration and transmitting part 73, 75 convert the detecting signal into a radio wave. (See Col. 9, lines 63-65.)

In the present invention, the capacitor acts as the sensor element. The elastic deformations of the bearing ring are transferred to the elastic areas of the capacitor, so that the change in the capacitance is an assessment criterion for the elastic deformation in the bearing ring. (See page 1, paragraphs [0013]-[0014]).

It is respectfully submitted that the amended claims presented herein are patentable over the teachings of Takizawa and McDearmon taken alone or in combination.

E. Conclusion

In view of the foregoing, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested.

Should any fees or extensions of time be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit account #02-2275.

Respectfully submitted,
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